Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A method of forming a bottom oxide layer in a trench structure, the method comprising:

(a) providing a semiconductor substrate and forming a trench structure on said semiconductor substrate;

(b) performing a plasma-enhanced chemical vapor deposition (PECVD) process without bias sputtering, with tetraethylorthosilicate (TEOS) as a gas source at a temperature of about 440℃ to about 520℃ to deposit an oxide layer on the bottom and sidewall of said trench structure and said semiconductor substrate, the oxide layer only partially filling the trench; and

(c) removing, using a single etching process, said oxide layer on the sidewall of said trench structure substantially completely and said oxide layer on the bottom of said trench structure partially to define a remaining oxide layer as the bottom oxide layer.

2. (original) The method according to claim 1 wherein the step (a) further comprises:

(a1) forming a pad oxide layer on the semiconductor substrate;

(a2) forming a silicon nitride layer on said pad oxide layer; and

(a3) removing said silicon nitride layer, said pad oxide layer and said semiconductor substrate partially to form said trench structure.

3. (original) The method according to claim 2 wherein the step (a3) is performed by a photolithography and dry-etching process.

4. (original) The method according to claim 1 wherein the trench structure has an aspect ratio between about 3.0 and about 4.0.

5. (original) The method according to claim 1 wherein said plasma-enhanced chemical vapor deposition (PECVD) process is performed at a temperature of about 440℃ to about 520℃.

6. (original) The method according to claim 1 wherein a ratio of a thickness of said oxide layer deposited on the bottom of said trench structure to a thickness of said oxide layer deposited on the sidewall of said trench structure is between about 1.5 and about 2.3.

7. (original) The method according to claim 1 wherein the step (c) is performed by a wet-etching process.

8. (original) The method according to claim 7 wherein an etching selectivity of said oxide layer on the sidewall of said trench structure to said oxide layer on the bottom of said trench structure is between about 2.5 and about 3.

9. (original) The method according to claim 1 wherein after the step (c), the steps of depositing and removing the oxide layer are repeated in sequence for allowing said bottom oxide layer to reach a required thickness.

10. (original) The method according to claim 1 wherein said oxide layer comprises a silicon oxide layer.

11. (currently amended) A method of fabricating a trench-type power MOSFET, the method comprising:

(a) providing a semiconductor substrate and forming a trench structure on the semiconductor substrate;

(b) performing a plasma-enhanced chemical vapor deposition (PECVD) process without bias sputtering, with tetraethylorthosilicate (TEOS) as a gas source at a temperature of about 440℃ to about 520℃ to deposit an oxide layer on the bottom and sidewall of said trench structure and said semiconductor substrate, the oxide layer only partially filling the trench;

(c) removing, using a single etching process, said oxide layer on the sidewall of said trench structure substantially completely and said oxide layer on the bottom of said trench structure partially to define the remaining oxide layer as a bottom oxide layer; and

(d) forming the trench-type power MOSFET device in said trench structure.

12. (original) The method according to claim 11 wherein the step (a) further comprises steps of:

(a1) forming a pad oxide layer on said semiconductor substrate;

(a2) forming a silicon nitride layer on said pad oxide layer; and

(a3) removing said silicon nitride layer, said pad oxide layer and said semiconductor substrate partially to form said trench structure.

13. (original) The method according to claim 12 wherein the step (a3) is performed by a photolithography and dry-etching process.

14. (original) The method according to claim 11 wherein said trench structure has an aspect ratio between about 3.0 and about 4.0.

15. (original) The method according to claim 11 wherein said plasma-enhanced chemical vapor deposition (PECVD) process is performed at a temperature of about 440℃ to about 520℃.

16. (original) The method according to claim 11 wherein a ratio of a thickness of said oxide layer deposited on the bottom of said trench structure to a thickness of said oxide layer deposited on the sidewall of said trench structure is between about 1.5 and about 2.3.

17. (original) The method according to claim 11 wherein the step (c) is performed by a wet-etching process.

18. (original) The method according to claim 17 wherein the etching selectivity of said oxide layer on the sidewall of said trench structure to said oxide layer on the bottom of said trench structure is between about 2.5 and about 3.

19. (original) The method according to claim 11 wherein between the steps of (c) and (d), the steps of depositing and removing said oxide layer are repeated for allowing said bottom oxide layer to reach a required thickness.

20. (original) The method according to claim 11 wherein said oxide layer comprises a silicon oxide layer.

21. (currently amended) A method of forming a bottom oxide layer in a trench structure, the method comprising:

providing a substrate including a trench having a bottom and a sidewall;

depositing an oxide layer on the bottom and sidewall of said trench by plasma-enhanced chemical vapor deposition (PECVD) process <u>without bias sputtering,</u> with tetraethylorthosilicate (TEOS) as a gas source at a temperature of about 440℃ to about 520℃, the oxide layer only partially filling the trench; and

removing<u>, using a single etching process,</u> said oxide layer on the sidewall of said trench substantially completely and said oxide layer on the bottom of said trench partially to form a remaining oxide layer as the bottom oxide layer on the bottom of said trench.

22. (original) The method of claim 21 wherein said oxide layer is removed by a wet-etching process having a higher etching selectivity of said oxide layer on the sidewall of said trench to said oxide layer on the bottom of said trench.

23. (original) The method of claim 22 wherein the etching selectivity of said oxide layer on the sidewall of said trench to said oxide layer on the bottom of said trench is between about 2.5 and about 3.

24. (previously presented) The method of claim 1 wherein the deposited oxide layer has a ratio of thickness on the bottom of the trench to thickness on the sidewall of the trench of higher than about 1.5.

25. (previously presented) The method of claim 24 wherein the deposited oxide layer has a ratio of thickness on the bottom of the trench to thickness on the sidewall of the trench of lower than about 2.3.